

AMENDMENTS TO THE CLAIMS

Claim 1. (Currently Amended) Printing device for receipts, each receipt having a first area bearing constant data that is the same from one receipt to another, and a second area bearing variable data that varies from one receipt to another, said device comprising:

a roll containing a continuous paper ribbon,

a first printing unit, ink jet, dot-matrix type,

a second printing unit thermal, dot-matrix type, said first and said second printing units being arranged along a print path,

a feeding mechanism that feeds said paper ribbon along said print path to permit printing of said paper ribbon by said first and said second printing units,

a cutter that cuts said continuous paper ribbon after the printing, so as to form the receipts, and

a control unit connected to said first ink jet printing unit and said second thermal printing unit, the control unit adapted to cause, for each receipt, said first ink jet printing unit to print on said paper ribbon said constant data, and to cause said second thermal printing unit to print on said paper ribbon said variable data

wherein:

said control unit is adapted to manage the operation of said printing device so that said first ink jet printing unit prints said constant data for each of said receipts, automatically and independently of said variable data, during a first preliminary printing step, and said second thermal printing unit prints, in response to a print command, said variable data received from said control unit and relative to each of said receipts, during a second printing step following said first printing step.

said second thermal printhead is adapted to print, during said second step subsequent to said first step, a given length of said ribbon at a printing speed that is greater than that of said first ink jet printhead, during said first step.

said first ink jet printing unit is colour type for printing on said paper ribbon, in colour form, predetermined symbols and/or characters.

said second thermal printing unit is of the in-line type and comprises a printhead arranged in a fixed position transversally with respect to said paper ribbon and also having a width substantially corresponding to that of a single line to be printed on said paper ribbon, and

said first ink jet printing unit is arranged downstream of said second thermal printing unit along said print path according to the direction of feeding of said paper ribbon.

Claims 2-13. (Cancelled)

Claim 14. (New) Printing device for receipts, each receipt having a first area bearing constant data that is the same from one receipt to another, and a second area bearing variable data that varies from one receipt to another, said device comprising:

a roll containing a continuous paper ribbon,

a first printing unit, ink jet, dot-matrix type,

a second printing unit thermal, dot-matrix type, said first and said second printing units being arranged along a print path,

a feeding mechanism that feeds said paper ribbon along said print path to permit printing of said paper ribbon by said first and said second printing units,

a cutter that cuts said continuous paper ribbon after the printing, so as to form the receipts, and

a control unit connected to said first ink jet printing unit and said second thermal printing unit, the control unit adapted to cause, for each receipt, said first ink jet printing unit to print on said paper ribbon said constant data, and to cause said second thermal printing unit to print on said paper ribbon said variable data,

wherein said control unit is adapted to manage the operation of said printing device so that said first ink jet printing unit prints said constant data for each of said receipts, automatically and independently of said variable data, during a first preliminary printing step,

and said second thermal printing unit prints, in response to a print command, said variable data received from said control unit and relative to each of said receipts, during a second printing step following said first printing step,

wherein said second thermal printhead is adapted to print, during said second step subsequent to said first step, a given length of said ribbon at a printing speed that is greater than that of said first ink jet printhead, during said first printing step,

wherein said second thermal printing unit is of the in-line type and comprises a printhead arranged in a fixed position transversally with respect to said paper ribbon and also having a width substantially corresponding to that of a single line to be printed on said paper ribbon,

wherein said first ink jet printing unit is arranged downstream of said second thermal printing unit along said print path according to the direction of feeding of said paper ribbon.

Claim 15. (New) Printing device according to claim 14, wherein said continuous paper ribbon comprises heat-sensitive thermal paper and said second printing unit is adapted to print on said thermal paper by selectively heating dot-like areas of said thermal paper.

Claim 16. (New) Printing device according to claim 14, wherein said continuous paper ribbon comprises plain paper, and said second printing unit is adapted to print on said plain paper by selectively heating dot-like areas of a printhead so as to transfer ink to said plain paper.

Claim 17. (New) Printing device according to claim 14, wherein said first ink jet printing unit is adapted to print said constant data on said paper ribbon, in response to a print signal generated after the cutting of a receipt.

Claim 18. (New) Printing device according to claim 14, further comprising a further print path for single documents consisting of single separate sheets, wherein said further print path extends between an entrance zone that receives said single documents, and an exit zone that delivers said single documents to the outside after printing, wherein said further print path shares a common outlet stretch with the print path provided for conveying said continuous paper ribbon, and wherein said first ink jet printing unit is arranged along said common stretch.

Claim 19. (New) Printing device for receipts, each receipt having a first area bearing constant data that is the same from one receipt to another, and a second area bearing variable data that varies from one receipt to another, said device comprising:

a roll containing a continuous paper ribbon,

a first printing unit, ink jet, dot-matrix type,

a second printing unit thermal, dot-matrix type, said first and said second printing units being arranged along a print path,

a feeding mechanism that feeds said paper ribbon along said print path to permit printing of said paper ribbon by said first and said second printing units,

a cutter that cuts said continuous paper ribbon after the printing, so as to form the receipts, and

a control unit connected to said first ink jet printing unit and said second thermal printing unit, the control unit adapted to cause, for each receipt, said first ink jet printing unit to print on said paper ribbon said constant data, and to cause said second thermal printing unit to print on said paper ribbon said variable data,

wherein said control unit is adapted to manage the operation of said printing device so that said first ink jet printing unit prints said constant data for each of said receipts, automatically and independently of said variable data, during a first preliminary printing step,

and said second thermal printing unit prints, in response to a print command, said variable data received from said control unit and relative to each of said receipts, during a second printing step following said first printing step,

wherein said second thermal printhead is adapted to print, during said second step subsequent to said first step, a given length of said ribbon at a printing speed that is greater than that of said first ink jet printhead, during said first printing step,

wherein said first ink jet printing unit is arranged downstream of said second thermal printing unit along said print path according to the direction of feeding of said paper ribbon.

Claim 20. (New) Printing device for receipts, each receipt having a first area bearing constant data that is the same from one receipt to another, and a second area bearing variable data that varies from one receipt to another, said device comprising:

a roll containing a continuous paper ribbon,

a first printing unit, ink jet, dot-matrix type,

a second printing unit thermal, dot-matrix type, said first and said second printing units being arranged along a print path,

a feeding mechanism that feeds said paper ribbon along said print path to permit printing of said paper ribbon by said first and said second printing units,

a cutter that cuts said continuous paper ribbon after the printing, so as to form the receipts, and

a control unit connected to said first ink jet printing unit and said second thermal printing unit, the control unit adapted to cause, for each receipt, said first ink jet printing unit to print on said paper ribbon said constant data, and to cause said second thermal printing unit to print on said paper ribbon said variable data,

wherein said control unit is adapted to manage the operation of said printing device so that said first ink jet printing unit prints said constant data for each of said receipts, automatically and independently of said variable data, during a first preliminary printing step,

and said second thermal printing unit prints, in response to a print command, said variable data received from said control unit and relative to each of said receipts, during a second printing step following said first printing step,

wherein said first ink jet printing unit is arranged downstream of said second thermal printing unit along said print path according to the direction of feeding of said paper ribbon.

Claim 21. (New) Printing device for receipts, each receipt having a first area bearing constant data that is the same from one receipt to another, and a second area bearing variable data that varies from one receipt to another, said device comprising:

a roll containing a continuous paper ribbon,

a first printing unit, ink jet, dot-matrix type,

a second printing unit thermal, dot-matrix type, said first and said second printing units being arranged along a print path,

a feeding mechanism that feeds said paper ribbon along said print path to permit printing of said paper ribbon by said first and said second printing units,

a cutter that cuts said continuous paper ribbon after the printing, so as to form the receipts, and

a control unit connected to said first ink jet printing unit and said second thermal printing unit, the control unit adapted to cause, for each receipt, said first ink jet printing unit to print on said paper ribbon said constant data, and to cause said second thermal printing unit to print on said paper ribbon said variable data,

wherein said second thermal printing unit is of the in-line type and comprises a printhead arranged in a fixed position transversally with respect to said paper ribbon and also having a width substantially corresponding to that of a single line to be printed on said paper ribbon,

wherein said first ink jet printing unit is arranged downstream of said second thermal printing unit along said print path according to the direction of feeding of said paper ribbon.

Claim 22. (New) Printing device for receipts, each receipt having a first area bearing constant data that is the same from one receipt to another, and a second area bearing variable data that varies from one receipt to another, said device comprising:

a roll containing a continuous paper ribbon,

a first printing unit, ink jet, dot-matrix type,

a second printing unit thermal, dot-matrix type, said first and said second printing units being arranged along a print path,

a feeding mechanism that feeds said paper ribbon along said print path to permit printing of said paper ribbon by said first and said second printing units,

a cutter that cuts said continuous paper ribbon after the printing, so as to form the receipts, and

a control unit connected to said first ink jet printing unit and said second thermal printing unit, the control unit adapted to cause, for each receipt, said first ink jet printing unit to print on said paper ribbon said constant data, and to cause said second thermal printing unit to print on said paper ribbon said variable data,

wherein said first ink jet printing unit is arranged downstream of said second thermal printing unit along said print path according to the direction of feeding of said paper ribbon.

Claim 23. (New) Printing device for receipts, each receipt having a first area bearing constant data that is the same from one receipt to another, and a second area bearing variable data that varies from one receipt to another, said device comprising:

a roll containing a continuous paper ribbon,

a first printing unit, ink jet, dot-matrix type,

a second printing unit thermal, dot-matrix type, said first and said second printing units being arranged along a print path,

a feeding mechanism that feeds said paper ribbon along said print path to permit printing of said paper ribbon by said first and said second printing units,

a cutter that cuts said continuous paper ribbon after the printing, so as to form the receipts, and

a control unit connected to said first ink jet printing unit and said second thermal printing unit, the control unit adapted to cause, for each receipt, said first ink jet printing unit to print on said paper ribbon said constant data, and to cause said second thermal printing unit to print on said paper ribbon said variable data,

a further print path for single documents consisting of single separate sheets, wherein said further print path extends between an entrance zone that receives said single documents, and an exit zone that delivers said single documents to the outside after printing, wherein said further

Applicant: Gianrico Scarton
Application No.: 10/579,853

print path shares a common outlet stretch with the print path provided for conveying said continuous paper ribbon, and wherein said first ink jet printing unit is arranged along said common stretch.